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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization

International Bureau



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(43) International Publication Date 23 October 2003 (23.10.2003)

**PCT** 

(10) International Publication Number WO 2003/086675 A3

(51) International Patent Classification7:

E21B 19/16

(21) International Application Number:

PCT/US2003/006544

(22) International Filing Date: 4 March 2003 (04.03.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/372.048

12 April 2002 (12.04.2002) US

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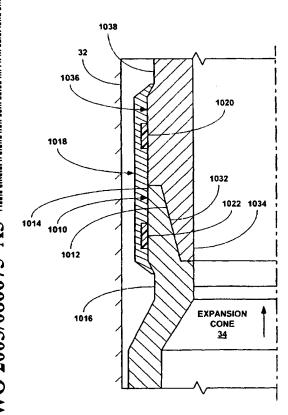
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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,

[Continued on next page]

(54) Title: PROTECTIVE SLEEVE FOR THREADED CONNECTIONS FOR EXPANDABLE LINER HANGER



(57) Abstract: A tubular sleeve (1018) is coupled to and overlaps the threaded connection (1012, 1032) between a pair of adjacent tubular members (1016, 1038).

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GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, TT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

#### Published:

- with international search report
- -- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 5 August 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

### INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/06544

A. CLASSIFICATION OF SUBJECT MATTER  IPC(7) : E21B 19/16  US CL : 166/380, 85.3, 309, 387, 72, 73; 285/382.7, 398  According to International Patent Classification (IPC) or to both national classification and IPC						
	DS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols) U.S.: 166/380, 85.3, 309, 387, 72, 73, 187, 195, 206, 207, 212, 216, 217; 285/382.7, 398, 55, 388.1						
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None						
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST						
C. DOC	UMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where ap			Relevant to claim No.		
Α	US 6,405,761 B1 (SHIMIZU et al) 18 June 2002, se	e entire docun	nent	1-120		
A	US 5,971,443 A (NOEL et al) 26 October 1999, see	entire docume	ent	1-120		
A	US 5,309,621 A (O'DONNELL et al) 10 May 1994, see entire document			1-120		
Α	US 3,997,193 A (TSUDA et al) 14 December 1976, see entire document			1-120		
A	US 3,989,280 A (SCHWARZ) 02 November 1976, see entire document			1-120		
A	US 3,834,742 A (MCPHILLIPS) 10 September 1974, see entire document		1-120			
A	US 3,579,805 A (KAST) 25 May 1971, see entire document		1-120			
A	US 2,647,847 A (BLACK et al) 04 August 1953, see entire document		1-120			
х	US 4,693,498 A (BLAUGH et al) 15 september 1987, see Fig. 2a and 2b.		54			
Furthe	r documents are listed in the continuation of Box C.	See	patent family annex.			
• 5	Special categories of cited documents:	"T" late	r document published after the inter and not in conflict with the applica-	national filing date or priority stion but cited to understand the		
"A" documen of partic	a defining the general state of the art which is not considered to be ular relevance	prin	nciple or theory underlying the investment of particular relevance; the	ntion		
1	pplication or patent published on or after the international filing date	con	sidered novel or cannot be consider on the document is taken alone	ed to involve an inventive step		
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	actual completion of the international search	Date of maili	ing of the international sea NUN 2004	rch report		
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Commissioner for Patents						
P.O. Box 1430 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230  Telephone No. (703) 306-4180						

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# INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 6,275,556 B1 (KINNEY et al) 14 August 2001. see Fig. 3	54		

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## INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/06544

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)				
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:				
1.		Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:		
2.		Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:		
3.	6.4(a).	Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule		
Вох	II Ob	servations where unity of invention is lacking (Continuation of Item 2 of first sheet)		
		ional Searching Authority found multiple inventions in this international application, as follows:		
1.	$\boxtimes$	As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.		
2.		As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite		
3.		payment of any additional fee.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:		
4.		No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:		
Re	mark on	Protest		

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# INTERNATIONAL SEARCH REPORT BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The independent claims of the Group I inventions all require the radial-plastic deformation of a jointed tubular connection whereas the independent claims of Group II inventions make no such requirement. Group III claims differ in that the independent claims require the radial-plastic deformation of the tubular connections in a method and/or apparatus used in extracting geothermal energy from a geothermal well whereas the Group IV invention makes no such deformation requirement. The Group I and II claims further differ in requiring tubular connections involving internal or external tubular threads with corresponding internal or external threaded sleeve ends. The independent claims of Groups III and IV all require their use as a liner in the completion of a well to be used in extracting geothermal energy. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid. Group I, claim(s) 1-53, drawn to a "Method." Group II, claim(s) 54-110, drawn to an "Apparatus." Group III, claim(s) 111-119, drawn to a "Method and Apparatus for Extracting Geothermal Energy." Group IV, claim(s) 120, drawn to an "Apparatus for Extracting Geothermal Energy."

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